AMENDMENTS TO THE CLAIMS:

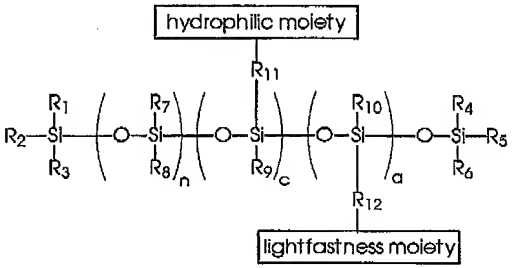
This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

Application No. 10/001,741

1. (Original) An ink composition which comprises water, a colorant, and a lightfastness agent of one of the formulae

I



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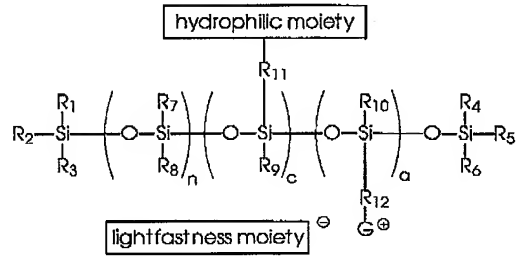

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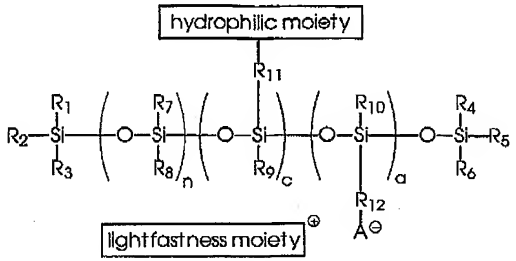
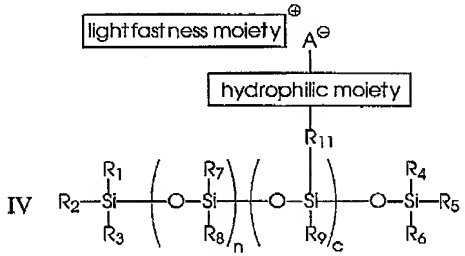
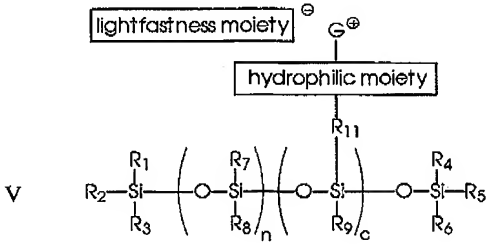

hydrophilic moiety
lightfastness moiety

IV


lightfastness moiety
hydrophilic moiety

or

V


lightfastness moiety
hydrophilic moiety

wherein R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9, and R_{10} each, independently of the others, is an alkyl group, an aryl group, an arylalkyl group, or an alkylaryl group, R_{11} and R_{12} each, independently of the others, is an alkylene group, an arylene group, an arylalkylene group, or an alkylarylene group, G is a cationic moiety, A is an anionic moiety, n is an integer representing the number of repeat -OSi(R_7)(R_8)- monomer units, a is an integer representing the number of repeat -OSi(R_{10})(R_{12}-lightfastness moiety)- monomer units, and c is an integer representing the number of repeat -OSi(R_9)(R_{11}-hydrophilic moiety)- monomer units.

2. (Original) An ink according to claim 1 wherein the lightfastness agent is of Formula I and the lightfastness moiety is a 2-(3-(2H-benzotriazol-2-yl)-4-hydroxyphenyl) group, a hydroxybenzophenone group, a hydroxybenzoic acid group, an alkoxybenzoic acid group, an ester of a substituted benzoic acid, a (hydroxyphenyl)-1,3,5-triazine group, a phenylbenzimidazole sulfonic acid group, or a reducing sugar group.

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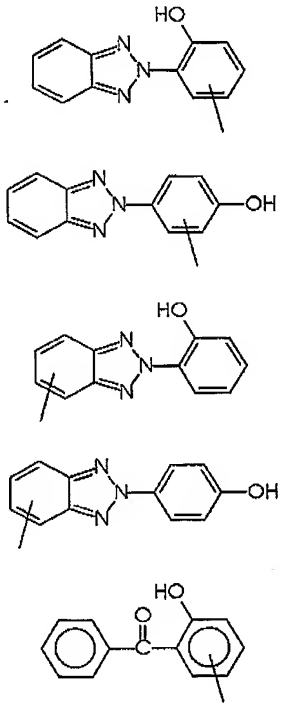
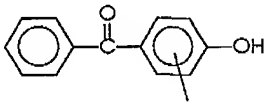
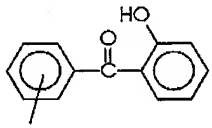
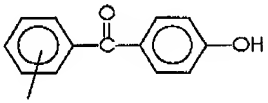
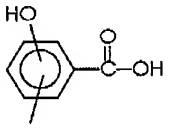
3. (Original) An ink according to claim 1 wherein the lightfastness agent is of Formula I and the lightfastness molety is of one of the formulae

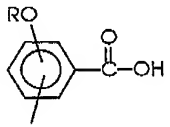




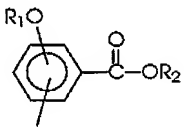




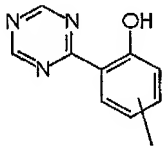


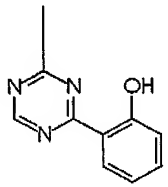


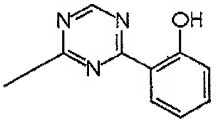
wherein R is an alkyl group, an aryl group, an arylalkyl group, or an alkylaryl group,

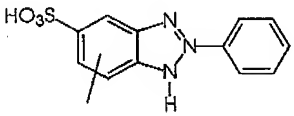


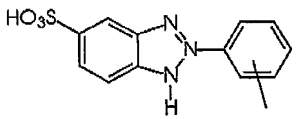
wherein R_1 and R_2 each, independently of the other, is an alkyl group, an aryl group, an arylalkyl group, or an alkylaryl group,











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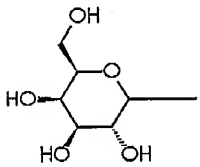
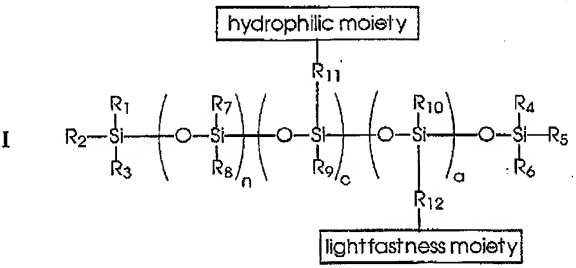
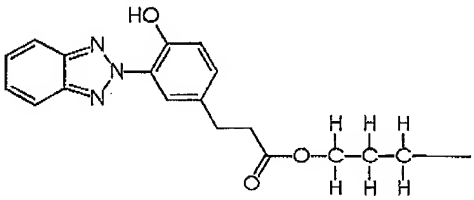


4. (Currently amended) An ink ~~according to claim 1~~ composition which comprises water, a colorant, and a lightfastness agent of the formula



wherein R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9, and R_{10} each, independently of the others, is an alkyl group, an aryl group, an arylalkyl group, or an alkylaryl group, R_{11} and R_{12} each, independently of the others, is an alkylene group, an arylene group, an arylalkylene group, or an alkylarylene group, n is an integer representing the number of repeat -OSi(R_7)(R_8)- monomer units, a is an integer representing the number of repeat -OSi(R_{10})(R_{12}-lightfastness moiety)- monomer units, and c is an integer representing the number of repeat -OSi(R_9)(R_{11}-hydrophilic moiety)- monomer units, wherein ~~the lightfastness agent is of Formula I and~~ the lightfastness moiety is of one of the formulae



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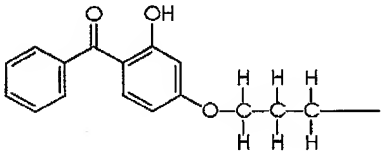

5. (Currently amended) An ink according to ~~claim 1~~ claim 22 wherein the lightfastness agent is of Formula II or Formula V and the lightfastness moiety is an anionic (hydroxyphenyl)benzotriazole, an anionic hydroxybenzophenone, an anionic hydroxybenzoic acid, an anionic alkoxybenzoic acid, an anionic ester of a substituted benzoic acid, or an anionic (hydroxyphenyl)-1,3,5 triazine.

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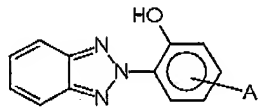
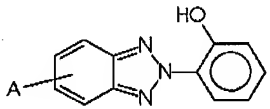
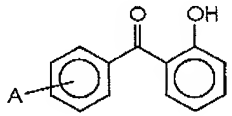
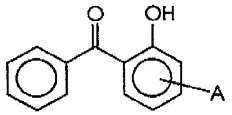
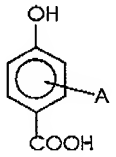
6. (Currently amended) An ink according to ~~claim 1~~ claim 22 wherein the lightfastness agent is of Formula II or Formula V and the lightfastness moiety is of one of the formulae

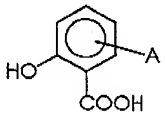


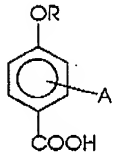




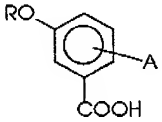




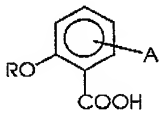




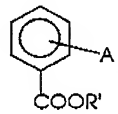
wherein R is an alkyl group,



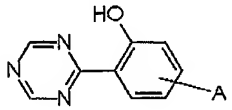
wherein R is an alkyl group,



wherein R is an alkyl group,



wherein R is an alkyl group,



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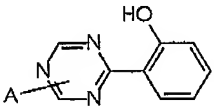

wherein A is an anionic substituent.

7. (Original) An ink composition according to claim 6 wherein A is a carboxylate group, a moiety substituted with a carboxylate group, a sulfonate group, a moiety substituted with a sulfonate group, a phosphonate group, or a moiety substituted with a phosphonate group.

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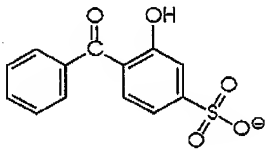
8. (Currently amended) An ink according to ~~claim 1~~ claim 22 wherein the lightfastness agent is of Formula II or Formula V and the lightfastness moiety is of one of the formulae



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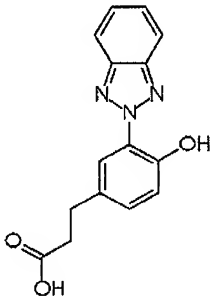

9. (Currently amended) An ink according to ~~claim 1~~ claim 22 wherein the lightfastness agent is of Formula II or Formula V and the lightfastness molety is 2-hydroxy-4-methoxybenzophenone-5-sulfonic acid; 2,2'-dihydroxy-4,4'dimethoxybenzophenone-5-sulfonic acid; 2,3-dimethoxybenzoic acid; 3,4-dimethoxybenzoic acid; 3,5-dimethoxybenzoic acid; 2,5-dimethoxybenzoic acid; 2,6-dimethoxybenzoic acid 3,4-dimethoxybenzenesulfonic acid; 3,4,5-trimethoxybenzoic acid; 2,4,5-trimethoxybenzoic acid; 4,5-dimethoxyphthalic acid; 2,3-bis-isopropylidenedioxybenzoic acid; 2,3-bis-(carboxymethyloxy)-benzoic acid; 2,5-dihydroxyphenylacetic acid; or mixtures thereof.

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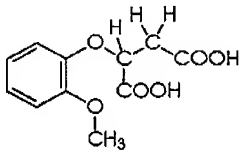
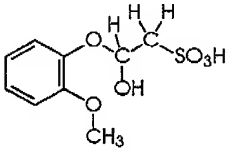
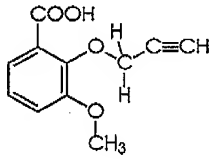
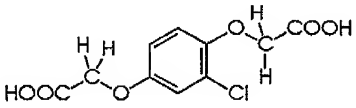
10. (Currently amended) An ink according to ~~claim 1~~ claim 22 wherein the lightfastness agent is of Formula II or Formula V and the lightfastness moiety is of one of the formulae









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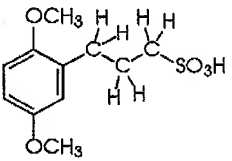

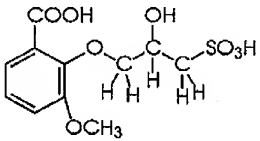

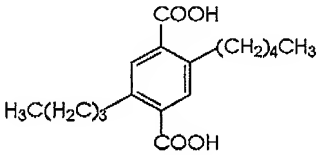

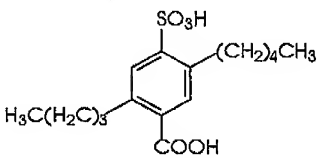

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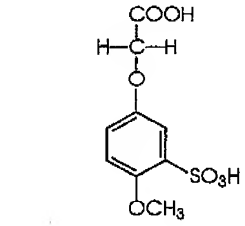

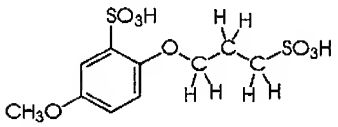

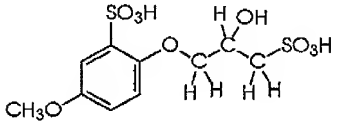

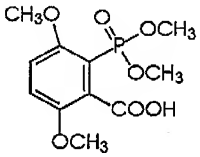

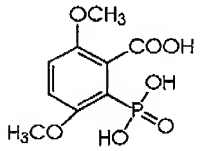

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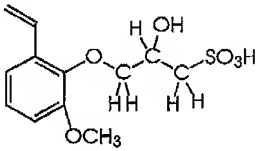

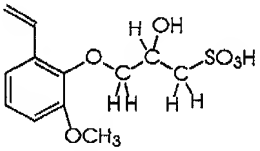

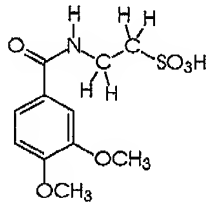

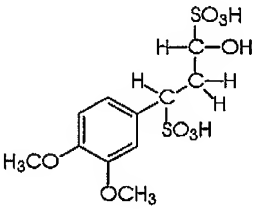

or

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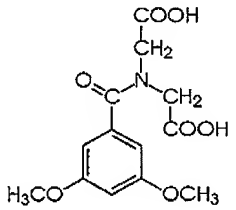
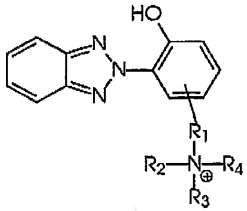
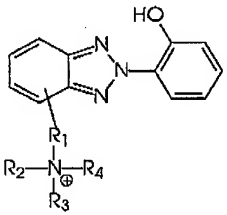
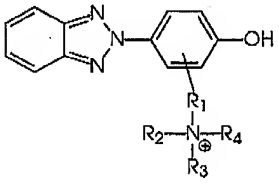


11. (Currently amended) An ink according to ~~claim 1~~ claim 22 wherein the lightfastness agent is of Formula III or Formula IV and the lightfastness moiety is a 2-(3-(2H-benzotriazol-2-yl)-4-hydroxyphenyl) quaternary compound, a hydroxybenzophenone quaternary compound, or a quaternary ammonium derivative of a dialkylaminobenzoate.

12. (Currently amended) An ink according to ~~claim 1~~ claim 22 wherein the lightfastness agent is of Formula III or Formula IV and the lightfastness moiety is of one of the formulae







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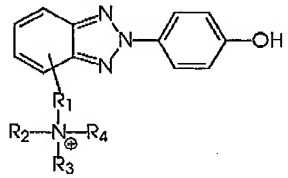

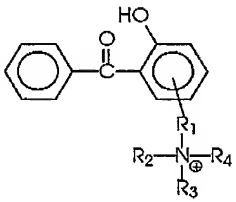

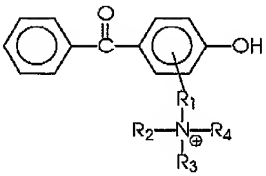

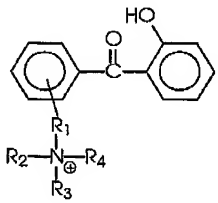

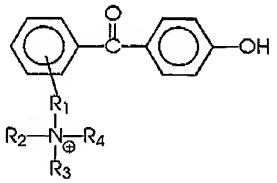

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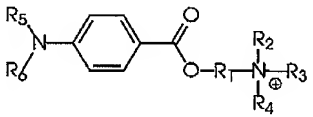
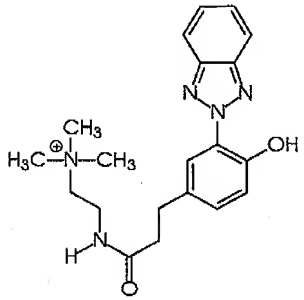
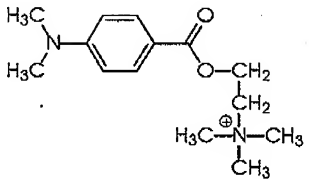


wherein R_5 and R_6 each, independently of the other, is an alkyl group or an arylalkyl group, R_1 is an alkylene group, an arylalkylene group, or a polyalkyleneoxy group, and R_2, R_3, and R_4 each, independently of the others, is a hydrogen atom, an alkyl group, an aryl group, an arylalkyl group, an alkylaryl group, an alkoxy group, or a polyalkyleneoxy group.

13. (Currently amended) An ink according to ~~claim 1~~ claim 22 wherein the lightfastness agent is of Formula III or Formula IV and the lightfastness moiety is of one of the formulae



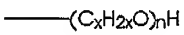
or



14. (Original) An ink according to claim 1 wherein the hydrophilic moiety is a polyoxyalkylene chain, a poly(2-alkyloxazoline), or a poly(ethyleneimine) chain.

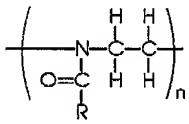
15. (Original) An ink according to claim 1 wherein the hydrophilic moiety is a polyethylene oxide chain, a polypropylene oxide chain, a polybutylene oxide chain, or a copolymer of two or more of ethylene oxide, propylene oxide, and butylene oxide.

16. (Original) An ink according to claim 1 wherein the hydrophilic moiety is (a) of one of the formulae

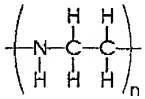


and

wherein x, independently in each single repeat alkylene oxide unit, is an integer of 2, 3, or 4 and n is an integer representing the number of repeat alkylene oxide units, (b) of the formula



wherein R is an alkyl group, an aryl group, an arylalkyl group, or an alkylaryl group, and n is an integer representing the number of repeat monomer units, or (c) of the formula



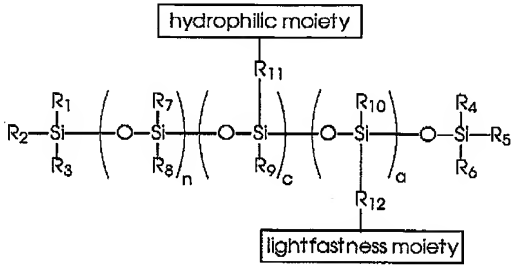
wherein n is an integer representing the number of repeat monomer units.

17. (Currently amended) An ink according to ~~claim 1~~ claim 22 wherein the lightfastness agent is poly(dimethylsiloxane-co-methyl (carboxyltrimethylsilylpentanoyl)siloxane)-graft-methoxypolyethylene glycol, poly(dimethylsiloxane-co-methyl(3-propyl(2-hydroxybenzophenone) siloxane)-graft-methoxypolyethylene glycol), Poly(dimethylsiloxane-co-methyl(2-(3-2H-benzotriazol-2-yl)-4-hydroxyphenyl)ethylpentanoate) siloxane)-graft-methoxypolyethylene glycol), the quaternary ammonium hydroxybenzotriazole salt of poly(dimethylsiloxane-co-methyl (carboxypentanoyl) siloxane)-graft-methoxypolyethylene glycol), the 2-hydroxy-4-methoxybenzophenone-5-sulfonate salt of poly(dimethylsiloxane-co-methyl(3-trimethylaminopropyl) siloxane), or a mixture thereof.

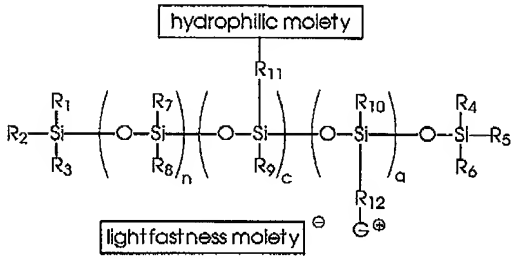
18. (Original) An ink according to claim 1 wherein the lightfastness agent is present in the ink in an amount of at least about 0.25 percent by weight of the ink, and wherein the lightfastness agent is present in the ink in an amount of no more than about 10 percent by weight of the ink.

19. (Original) A process which comprises (a) incorporating into an ink jet printing apparatus an ink composition comprising water, a colorant, and a lightfastness agent of one of the formulae

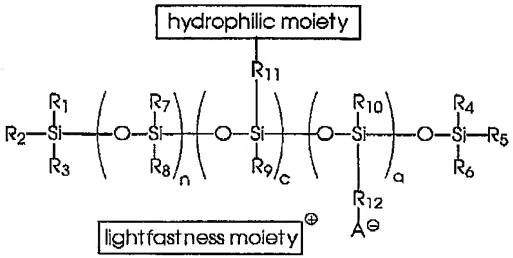
I


hydrophilic moiety
lightfastness moiety

II


hydrophilic moiety
lightfastness moiety

III


hydrophilic moiety
lightfastness moiety

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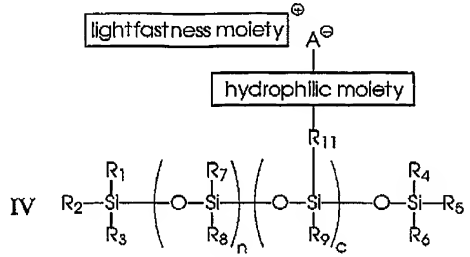
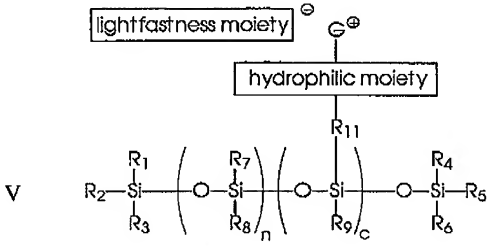


or



wherein R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9, and R_{10} each, independently of the others, is an alkyl group, an aryl group, an arylalkyl group, or an alkylaryl group, R_{11} and R_{12} each, independently of the others, is an alkylene group, an arylene group, an arylalkylene group, or an alkylarylene group, G is a cationic moiety, A is an anionic moiety, n is an integer representing the number of repeat -OSi(R_7)(R_8)- monomer units, a is an integer representing the number of repeat -OSi(R_{10})(R_{12}-lightfastness moiety)- monomer units, and c is an integer representing the number of repeat -OSi(R_9)(R_{11}-hydrophilic moiety)- monomer units, and (b) causing droplets of the inks to be ejected in an imagewise pattern onto a recording substrate.

20. (Original) A process according to claim 19 wherein the printing apparatus employs a thermal ink jet process wherein the ink in the nozzles is selectively heated in an imagewise pattern, thereby causing droplets of the ink to be ejected in imagewise pattern.

21. (Original) A process according to claim 19 wherein the printing apparatus employs a piezoelectric ink jet process wherein droplets of the ink are caused to be ejected in imagewise pattern by oscillations of piezoelectric vibrating elements.

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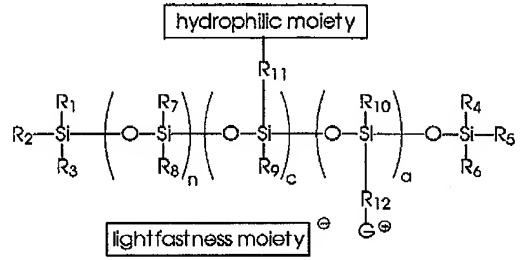
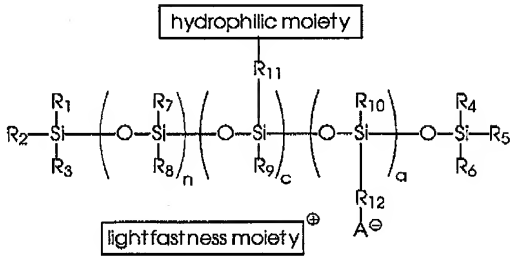
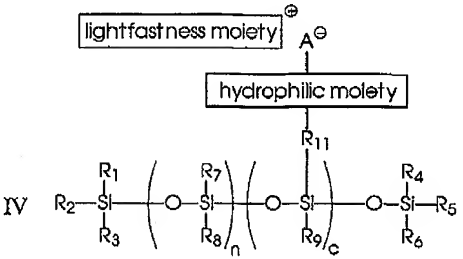
22. (New) An ink composition which comprises water, a colorant, and a lightfastness agent of one of the formulae

II

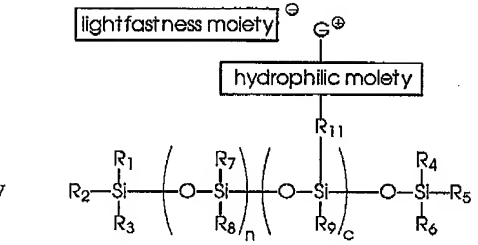


III



IV 

or

V 

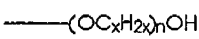
wherein R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9, and R_{10} each, independently of the others, is an alkyl group, an aryl group, an arylalkyl group, or an alkylaryl group, R_{11} and R_{12} each, independently of the others, is an alkylene group, an arylene group, an arylalkylene group, or an alkylarylene group, G is a cationic moiety, A is an anionic moiety, n is an integer representing the number of repeat -OSi(R_7)(R_8)- monomer units, a is an integer representing the number of repeat -OSi(R_{10})(R_{12}-lightfastness moiety)- monomer units, and c is an integer representing the number of repeat -OSi(R_9)(R_{11}-hydrophilic moiety)- monomer units.

23. (New) An ink according to claim 22 wherein the hydrophilic moiety is a polyoxyalkylene chain, a poly(2-alkyloxazoline), or a poly(ethyleneimine) chain.

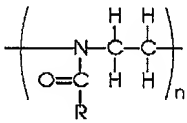
24. (New) An ink according to claim 22 wherein the hydrophilic moiety is a polyethylene oxide chain, a polypropylene oxide chain, a polybutylene oxide chain, or a copolymer of two or more of ethylene oxide, propylene oxide, and butylene oxide.

25. (New) An ink according to claim 1 wherein the hydrophilic moiety is (a) of one of the formulae

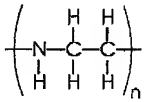
and



wherein x, independently in each single repeat alkylene oxide unit, is an integer of 2, 3, or 4 and n is an integer representing the number of repeat alkylene oxide units, (b) of the formula



wherein R is an alkyl group, an aryl group, an arylalkyl group, or an alkylaryl group, and n is an integer representing the number of repeat monomer units, or (c) of the formula



wherein n is an integer representing the number of repeat monomer units.

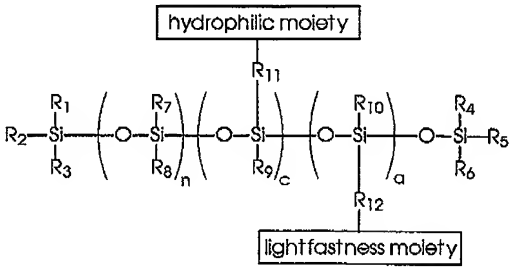
26. (New) An ink according to claim 22 wherein the lightfastness agent is present in the ink in an amount of at least about 0.25 percent by weight of the ink, and wherein the lightfastness agent is present in the ink in an amount of no more than about 10 percent by weight of the ink.

27. (New) A process which comprises (a) incorporating into an ink jet printing apparatus an ink composition according to claim 22, and (b) causing droplets of the inks to be ejected in an imagewise pattern onto a recording substrate.

28. (New) A process according to claim 27 wherein the printing apparatus employs a thermal ink jet process wherein the ink in the nozzles is selectively heated in an imagewise pattern, thereby causing droplets of the ink to be ejected in imagewise pattern.

29. (New) A process according to claim 27 wherein the printing apparatus employs a piezoelectric ink jet process wherein droplets of the ink are caused to be ejected in imagewise pattern by oscillations of piezoelectric vibrating elements.

30. (New) An ink composition which comprises water, a colorant, and a lightfastness agent of one of the formula

I 

wherein R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9, and R_{10} each, independently of the others, is an alkyl group, an aryl group, an arylalkyl group, or an alkylaryl group, R_{11} and R_{12} each, independently of the others, is an alkylene group, an arylene group, an arylalkylene group, or an alkylarylene group, n is an integer representing the number of repeat -OSi(R_7)(R_8)- monomer units, a is an integer representing the number of repeat -OSi(R_{10})(R_{12}-lightfastness moiety)- monomer units, and c is an integer representing the number of repeat -OSi(R_9)(R_{11}-hydrophilic moiety)- monomer units, wherein the lightfastness moiety is a hydroxybenzophenone group, a hydroxybenzoic acid group, an alkoxybenzoic acid group, an ester of a substituted benzoic acid, a (hydroxyphenyl)-1,3,5-triazine group, a phenylbenzimidazole sulfonic acid group, or a reducing sugar group.

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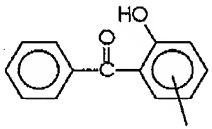
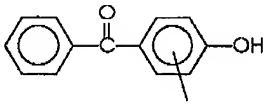
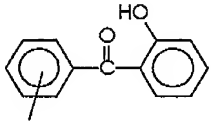
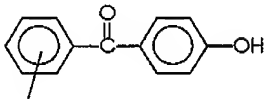
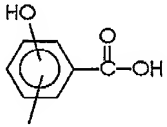
31. (New) An ink according to claim 30 wherein the lightfastness moiety is of one of the formulae

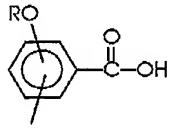




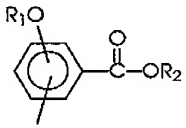




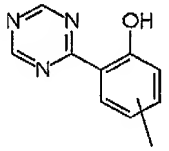


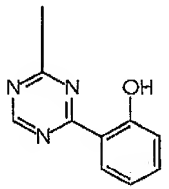


wherein R is an alkyl group, an aryl group, an arylalkyl group, or an alkylaryl group,



wherein R_1 and R_2 each, independently of the other, is an alkyl group, an aryl group, an arylalkyl group, or an alkylaryl group,





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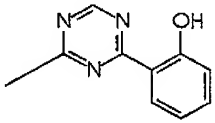

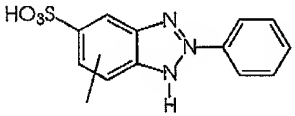

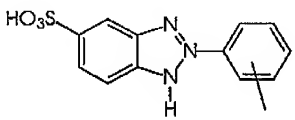

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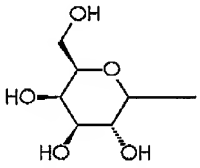
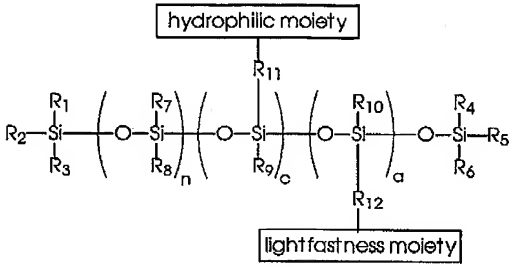
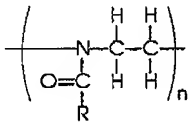


32. (New) An ink composition which comprises water, a colorant, and a lightfastness agent of one of the formula

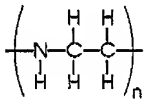
I 

wherein R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9, and R_{10} each, independently of the others, is an alkyl group, an aryl group, an arylalkyl group, or an alkylaryl group, R_{11} and R_{12} each, independently of the others, is an alkylene group, an arylene group, an arylalkylene group, or an alkylarylene group, n is an integer representing the number of repeat -OSi(R_7)(R_8)- monomer units, a is an integer representing the number of repeat -OSi(R_{10})(R_{12}-lightfastness moiety)- monomer units, and c is an integer representing the number of repeat -OSi(R_9)(R_{11}-hydrophilic moiety)- monomer units, wherein the hydrophilic moiety is a poly(2-alkyloxazoline) or a poly(ethyleneimine) chain.

33. (New) An ink according to claim 32 wherein the hydrophilic moiety is (a) of the formula



wherein R is an alkyl group, an aryl group, an arylalkyl group, or an alkylaryl group, and n is an integer representing the number of repeat monomer units, or (b) of the formula



wherein n is an integer representing the number of repeat monomer units.